



Federal Aviation Administration

Memorandum

Date: July 31, 2013

To: Ron Beckerdite
Service Center Director, Western Service Area
[Redacted]

From: Andy Richards
Manager, San Francisco Airport Traffic Control Tower

Subject: **INFORMATION:** Certification Statement
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013

I certify that air traffic aircraft accident package, SFO-ATCT-0027, has been reviewed and is complete.

AIRCRAFT ACCIDENT PACKAGE

SFO-ATCT-0027

AAR214, B772

July 06, 2013, 1828 UTC

DESTROY: January 6, 2016

SECTION 1.
Table of Contents

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SECTION 2.

FAA Form 8020-6, Report of Aircraft Accident, and FAA
Form(s) 8020-6-1, Report of Aircraft Accident (Continuation
Sheet)

FAA Form 8020-6, Report of Aircraft Accident

<div style="display: inline-block; vertical-align: middle;"> DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION </div>		Report Date: July 31, 2013		Report Number: SFO-ATCT-0027			
		Name of Reporting Facility: <div style="text-align: right;">San Francisco ATCT (SFO)</div>					
1. Aircraft Identification and Type: AAR214, B772		2. Date/Time of Accident (GMT): July 06, 2013; 1828 UTC		3. Location of Accident: San Francisco, CA, On airport, at approach end runway 28L.			
4. Nature of Accident: AAR214 crashed on landing runway 28L.			5. Type of Flight: RKSI to KSFO - IFR Flight Plan				
6. Flight Crew	Name	Position	Address (City and State)	Uninjured	Injured	Fatality	Unknown
	Lee Kang Kuk	Pilot	Seoul, Korea,	X			
	Lee Jungmin	Pilot	Seoul, Korea,	X			
	Lee Jung Joo	Pilot	Seoul, Korea,	X			
	Bong Dongwon	First Officer	Seoul, Korea,		X		
	Unknown	Flight Attendant	Unknown		X		
7. Passenger Data : (If available, list names, addresses, extent of injuries and other information on continuation sheet.)			Number Aboard 291	Number Uninjured 106	Number Injured 182	Number Fatalities 3	
8. Aircraft Damage: Destroyed			9. Property Damage: Unknown				
10. Operating Status of Navigational Aids/Lights/Communications: ILS 28L Glide Slope Out of Service.							
11. Weather Data	Conditions in Accident Area at Time of Accident: San Francisco METAR Automated - 1056 PDT: wind two one zero at zero six knots, visibility one zero statute miles, few clouds one thousand six hundred, temperature one eight, dew point one zero, altimeter two nine eight two						
	Report Just Prior to Accident: San Francisco METAR Automated - 1056 PDT: wind two one zero at zero six knots, visibility one zero statute miles, few clouds one thousand six hundred, temperature one eight, dew point one zero, altimeter two nine eight two					Date/Time 7/6/2013 1756 UTC	
	First Report Subsequent to Accident: San Francisco METAR Automated - 1156 PDT: wind two one zero at zero seven knots, wind variable between one seven zero and two four zero, visibility one zero statute miles, few clouds one thousand six hundred, temperature one eight, dew point one zero, altimeter two nine eight two					Date/Time 7/6/2013 1856 UTC	
12. ATS Personnel Involved	Name	Facility	Operating Position		Check If Eyewitness		
	Joseph Y. Okuda *(JH)	SFO ATCT	LC LC		X		
	Russell Kipker (KP)	SFO ATCT	LC LC		X		
	Alexis M. Shirkey (LX)	SFO ATCT	LCA LA		X		
	Peter Sachs (PZ)	SFO ATCT	CD CD		X		
	Dawn McMullin (MN)	SFO ATCT	OSCIC SC		X		
	Nicole Findlay (NF)	SFO ATCT	GC2 GC		X		
	Rolf Knaack (RK)	SFO ATCT	OSCIC SC				
*Operating Initials							
13. Signature of Facility Manager <div style="display: flex; justify-content: space-between;"> <div>Andy Richards</div> <div style="background-color: black; width: 200px; height: 40px;"></div> </div>							



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
REPORT OF AIRCRAFT ACCIDENT
(Continuation Sheet)

REPORT DATE

July 10, 2013

REPORT NO.

SFO-ATCT-0027

NAME OF REPORTING FACILITY

Oakland ARTCC (ZOA)

14. CHRONOLOGICAL SUMMARY OF FLIGHT

July 06, 2013

ALL TIMES BELOW ARE COORDINATED UNIVERSAL TIME
UNLESS OTHERWISE SPECIFIED

- 1733 AAR214 checked on Oakland Center sector 36's frequency at FL390 and was issued a beacon code of 4166.
- 1738 AAR214 was radar identified at VESPA Waypoint.
- 1740 AAR214 was cleared to San Francisco via Point Reyes and the Golden Gate Arrival.
- 1755 AAR214 was issued a clearance to descend at pilot's discretion to maintain FL240.
- 1756 AAR214 reported leaving FL390 for FL240.
- 1759 AAR214 was instructed to contact Oakland Center on 125.85.
- 1800 AAR214 checked on Oakland Center sector 41's frequency, 125.85, and was instructed to cross LOZIT intersection at and maintain 11,000 feet and also issued the local altimeter of 29.80.
- 1810 AAR214 was instructed to contact Northern California TRACON on 133.95.

No More Follows



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
REPORT OF AIRCRAFT ACCIDENT
(Continuation Sheet)

REPORT DATE

July 15, 2013

REPORT NO

SFO-ATCT-0027

NAME OF REPORTING FACILITY

Northern California TRACON (NCT)

14 CHRONOLOGICAL SUMMARY OF FLIGHT

July 06, 2013

ALL TIMES BELOW ARE COORDINATED UNIVERSAL TIME
UNLESS OTHERWISE SPECIFIED

- 1811 AAR214 was handed off from Oakland ARTCC to Norcal Approach and was issued direct to the SFO VOR and then issued a heading 140 vector for a visual approach to runway 28 left at San Francisco Airport.
- 1813 AAR214 was told to reduce speed to 210 knots. The pilot acknowledged the instruction.
- 1816 AAR214 was issued a descent to 9,000 and frequency changed to approach on 135.65. The pilot acknowledged the instructions but read back the frequency as 125.65.
- 1817 The controller corrected the read back error and AAR214 acknowledged the correct frequency. AAR214 checked on with the next sector and was issued a caution wake turbulence advisory and was told he would be following a heavy B777. AAR214 acknowledged the information.
- 1819 AAR214 was issued a descent to 6,000 and a left turn heading 100. AAR214 acknowledged the instructions.
- 1820 AAR214 was issued a descent to 4,000 and a left turn heading 030. The pilot acknowledged the instructions.
- 1821 The controller pointed out the airport at nine to ten o'clock and 17 miles and asked AAR214 if the airport was in sight. AAR214 reported the runway in sight and was cleared for a visual approach to runway 28 left by the controller.
- 1822 AAR214 acknowledged the visual approach clearance.
- 1823 AAR214 was issued a speed reduction to 180 and instructed to maintain that speed to a 5 mile final. Traffic was issued behind and to his right and AAR214 was advised the traffic had them in sight. AAR214 acknowledged the information and instructions.
- 1825 AAR214 was issued a frequency change to San Francisco Tower on 120.5. The pilot acknowledged the instruction but his read back was partially unintelligible.

No More Follows



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
REPORT OF AIRCRAFT ACCIDENT
(Continuation Sheet)

REPORT DATE

July 31, 2013

REPORT NO.

SFO-ATCT-0027

NAME OF REPORTING FACILITY

San Francisco ATCT (SFO)

14. CHRONOLOGICAL SUMMARY OF FLIGHT

July 06, 2013

ALL TIMES BELOW ARE COORDINATED UNIVERSAL TIME
UNLESS OTHERWISE SPECIFIED

1825 AAR 214 on a visual approach reported 7 mile final Runway 28L.

1826 AAR214 reported short final.

1827 SFO ATCT LC cleared AAR214 to land Runway 28L.

1828 AAR214 crashed on the approach end of Runway 28L.

6. Flight Crew, Continued.

, Flight Attendant, Unknown City and State, Injured
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.
, Flight Attendant, Unknown City and State, Uninjured.

12. ATS Personnel Involved, Continued.

Bryan Friedline (BF), Northern California Tracon (NCT)(2B)AP
Shane Evanshine (UC), Northern California Tracon (NCT)(2W)AP

No More Follows

SECTION 3.
Normal Service Statement(s) and Certified Index(es)



Federal Aviation Administration

Memorandum

Date: JUL 15 2013

To: San Francisco Airport Traffic Control Tower

From: [REDACTED]
R. Randall Park, Manager, Oakland Air Route Traffic Control Center

Subject: **INFORMATION**: Normal Service Statement
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013

All services provided by Oakland Air Route Traffic Control Center were normal, and there were no pertinent transmissions.

Attachments

SFO-ATCT-0027
AAR214

CERTIFIED INDEX

JUL 15 2013

I certify that the following originals are on file in this office.

FAA Form 7230-4
FAA Form 7230-10
FAA Form 8020-6-1
FAA Form 8020-9
FAA Form 8020-26
Personnel Log(s)
Certified Original Copy(ies) of Voice Recording(s)
Certified Working Copy(ies) of Voice Recording(s)
Facility Layout Chart(s)
Airport Diagram
Flight Progress Strip(s)
ERAM SAR Files
CPDLC Messages
Weather Data

A black rectangular redaction box covering a handwritten signature.

R. Randall Park
Manager, Oakland ARTCC

SFO-ATCT-0027
AAR214

CERTIFIED INDEX

July 10, 2013

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FAA Form 8020-26
Personnel Log(s)
Certified Original Copy(ies) of Voice Recording(s)
Certified Working Copy(ies) of Voice Recording(s)
Facility Layout Chart(s)
Continuous Data Recording (CDR)
Flight Progress Strip(s)
Transcription(s) of Voice Recording(s)




Donald H. Kirby
Manager, Northern California TRACON


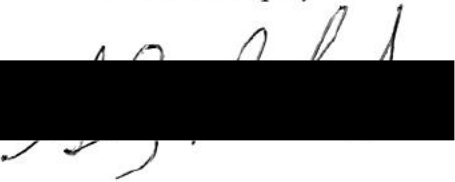
SFO-ATCT-0027
AAR214

CERTIFIED INDEX

July 31, 2013

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FAA Form 7230-10
FAA Form 8020-6
FAA Form 8020-6-1
FAA Form 8020-9
FAA Form 8020-3
FAA Form 8020-26
Personnel Log(s)
Certified Original Copy(ies) of Voice Recording(s)
Certified Working Copy(ies) of Voice Recording(s)
Facility Layout Chart(s)
Airport Diagram
Flight Progress Strip(s)
Transcription(s) of Voice Recording(s)
AMASS Replay



Andy Richards
Manager, San Francisco ATCT

SFO-ATCT-0027
AAR214


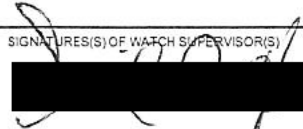
SECTION 4.

FAA Form(s) 7230-4, Daily Record of Facility Operation

DAILY RECORD OF FACILITY OPERATION				PAGE NO Page 1 of 1
				DATE Jul 6, 2013
LOCATION	IDENTIFICATION	TYPE FACILITY	OPERATING POSITION	CHECKED BY [REDACTED]
Mather, CA	NCT	TRACON	OMIC	AR TRAFFIC MANAGER Donald H. [REDACTED] by [REDACTED]
UTC TIME	REMARKS			
0700	J. CAMPA ON. WEST PLAN. SFO RWY28 CA ENABLED. CPPL: SECON LEVEL BASELINE. BAB TAC OTS. -- JG			
M 0716	NCT-M-2013/07/06-0001 -- CMD2 -- JG			
0730	WCLC. -- JG			
0745	ARTS COLDSTART COMPLETE. -- JG			
1215	J. GRYZBEK ON. -- GR			
1401	SFO RWY 28 ZONE INHIBITED. -- GR			
1542	WCLC. -- GR			
1623	DALR RECORDER CHECK COMPLETE. -- GR			
1827	RCH358/C17 REPORTED TO PARADISE THEY HEARD A MAYDAY CALL ON EITHER 121.5 OR 243.0, AND SHORTLY AFTER A BRIEF ELT. THE PILOT STATED HE THOUGHT THE CALL SIGN WAS EITHER TANGO1 OR EAGLE1. NEITHER CALL SIGN IN COUNT OPS. ZOA/OM AND ROC ADVISED. -- FT			
Q 1828	AIRCRAFT ACCIDENT AT SFO INVOLVING AAR214/B777 LANDING RUNWAY 28L, RRSI-SFO, AIRPORT OPERATIONS SUSPENDED. -- FT			
1833	D. FOLLETT ON. -- FT			
1844	DEN HAS WAIVED REPORTING REQUIREMENTS FOR SFO DIVERTS UNTIL 2300Z. -- FT			
1950	RNO GO AROUND, SKW6345/CRJ2, WIND SHIFT. -- FT			
2129	WCLC. -- FT			
2227	SFO RWY 19R OPEN. -- FT			
2230	SOUTHEAST PLAN, SFO RWY 19, OAK RWY 29, SJC RWY 30. -- FT			
0100	D. FREEMAN ON. -- DN			
0200	OAK ON RWY 11. -- DN			
0430	G.MCCOY ON. -- ET			
0635	SJC ON RWY 12. -- ET			
0659	COB -- ET			
I CERTIFY that entries above are correct that all scheduled operations have been accomplished except as noted, and that all abnormal occurrences and conditions have been recorded		SIGNATURE(S) OF WATCH SUPERVISOR(S) [REDACTED]		



FAA Form 7230-4

SFO-ATCT-0027
AAR214

DAILY RECORD OF FACILITY OPERATION				PAGE NO Page 1 of 2
				DATE Jul 6, 2013
LOCATION	IDENTIFICATION	TYPE FACILITY	OPERATING POSITION	CHECKED BY 
San Francisco, CA	SFO	ATCT	OS/CIC	AIR TRAFFIC MANAGER Andrew M. Richards
UTC TIME	REMARKS			
0700	E. Hughes on, Dept Rys 1, Lndg Rys 28, CFPL: Twy Z1 entrance to rwy 10R restricted to single or twin engine prop only, Z1 exit unrestricted. Ry 28R/L ALS OTS, Ry 28R/L & LDA GS OTS, IM/FFM OTS, Ry 28R/L TD RVR OTS. -- EH			
0800	Depg rwys 10, wind 24006. -- EH			
0931	P. Escobar on. -- PD			
1230	LUAW at INT of RWY 1R and TWY M in effect. -- PD			
1254	LUAW at INT of RWY 1R and TWY M suspended. -- PD			
1302	D. McMullin on. -- PD			
1330	R. Knaack on, above noted. -- RK			
1340	WCLC. -- RK			
1500	D. McMullin on. -- MN			
1532	J. Okuda on. -- MN			
1547	R. Knaack on, above noted. -- MN			
1803	D. McMullin on. -- RK			
1828	Airport closed due to an aircraft mishap, see SFO-M-2013-13/07/06-0001. -- RK			
1830	R. Knaack on, above noted. -- RK			
1918	N. Findlay on, above noted. -- NF			
1933	R. Knaack on, above noted. -- RK			
M 1944	SFO-M-2013/07/06-0001 -- AAR214 -- RK			
2109	Twy L, P, N clsd btn Rwys 28. Twy w clsd. Twy F & C clsd east of Rwys 01R. -- BD			
2118	B. Descalopoulis on, above noted. -- RK			
2124	Twy L open. -- BD			
E 2130	Rwy 28L PAPI ots -- BD			
2154	Rwy 19R 19L open. -- BD			
2225	Airport open. Landing and departing Rys 19. -- BD			
2249	S. Orman on, above noted. -- BD			
0027	WCLC. -- SO			
0101	B. Descalopoulis on, above noted. -- BD			
0219	S. Orman on, above noted. -- SO			
I CERTIFY that entries above are correct, that all scheduled operations have been accomplished except as noted, and that all abnormal occurrences and conditions have been recorded.		SIGNATURE(S) OF WATCH SUPERVISOR(S) 		

FAA Form 7230-4

SFO-ATCT-0027
AAR214

DAILY RECORD OF FACILITY OPERATION				PAGE NO Page 2 of 2
				DATE Jul 6, 2013
LOCATION	IDENTIFICATION	TYPE FACILITY	OPERATING POSITION	CHECKED BY 
San Francisco, CA	SFO	ATCT	OS/CIC	AIR TRAFFIC MANAGER Andrew M. Richards
UTC TIME	REMARKS			
0323	B. Descalopoulis on, above noted. -- BD			
0434	S. Orman on, above noted. -- BD			
0543	D. Hearn on, above noted. -- SO			
0611	WCLC -- JT			
0659	COB -- JT			
I CERTIFY that entries above are correct, that all scheduled operations have been accomplished except as noted, and that all abnormal occurrences and conditions have been recorded.		SIGNATURE(S) OF WATCH SUPERVISOR(S) 		

FAA Form 7230-4

SFO-ATCT-0027
AAR214

SECTION 5.
Personnel Log(s)

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		AWP		NCT		AREA B			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGND	HOURS POSITION DUTIES ASGND	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
ANTONE, AARON (AE) 05:30 - 13:30	R	05:30	08:15	02+45	05+15	Leave	00+00	01+46			
FRIEDLINE, BRYAN (BF) 05:30 - 13:30	R	05:30	13:30	11+45			04+42	04+46			
		13:30	17:15								
SAMSEL, TIMOTHY (JI) 05:30 - 13:30	R	05:30	13:30	08+00			00+01	05+23			
HODSDON, JEFFREY (CO) 06:00 - 16:00	R	06:00	16:00	10+00			00+00	04+35			
MOSES, LEONARD (MO) 06:35 - 14:35	R	06:35	14:35	08+50			00+46	08+01			
	1	14:35	15:25								
EVANSHINE, SHANE (UC) 07:37 - 15:37	R	07:37	15:37	10+10			04+45	02+37			
		15:37	17:47								
WITTENBERG, ERIK (EW) 07:48 - 15:48	R	07:48	15:48	08+00			00+00	04+18			
CLARK, JULIANNA (JZ) 07:59 - 15:59	R	07:59	15:59	08+00			01+13	04+18			
LYLE, DEVIN (DV) 11:00 - 21:00	R	11:00	21:00	10+00			05+18	02+05			
ALVAREZ, RAFAEL (GZ) 12:55 - 20:55	R	12:55	20:55	08+00			06+19	00+57			
GALLAGHER, NATHAN (NJ) 13:15 - 21:15	R	13:15	21:15	08+00			00+51	03+27			
TABOR, FRANKLIN (UP) 13:15 - 21:15	R	13:15	21:15	08+00			01+22	03+44			
WILCOX, SCOTT (SW) 13:30 - 21:30	R	13:30	21:30	10+00			00+28	09+23			
	1	21:30	23:30								
BUSTAMONTE, JOSHUA (VB) 13:45 - 21:45	R	13:45	21:45	08+00			00+02	03+57			
PITTMAN, WILLIAM (KA) 13:45 - 21:45	R	13:45	21:45	08+00			01+22	03+28			
HUNT, PATRICK (DQ) 14:00 - 22:00	R	14:00	17:00	03+00	05+00	Leave	01+34	00+23			
ROSE, AARON (UF) 14:45 - 22:45	R	14:45	22:45	08+00			00+14	04+20			
BOGART, CARL (CB) 16:00 - 00:00	R	16:00	00:00	08+00			00+19	04+39			
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	

THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT
(Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		AWP		NCT		AREA B			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGNDE	HOURS POSITION DUTIES ASGNDE	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
RUBERT, DAVID (KD) 16:00 - 00:00	R	16:00	00:00	08+00			00+05	05+01			
STENDER, DANIEL (WH) 16:00 - 00:00	R	16:00	00:00	08+00			00+11	04+34			
WITTENBERG, ERIK (EW) 23:54 - 07:54	R	23:54	07:54	08+00			00+00	03+15			
BUENROSTRO, JUAN (OG) 05:30 - 13:30					08+00	Leave	00+00	00+00			
COOK, PATRICK (PC) 07:00 - 15:00					08+00	Leave	00+00	00+00			
MCCLAIN, JOHN (JM) 07:00 - 15:00					08+00	Leave	00+00	00+00			
GEDDES, JEFFREY (JF) 14:00 - 00:00					10+00	Leave	00+00	00+00			
DANIELS, TROY (TD) NAS											
DOMITROVICH, ADAM (DH) NAS											
MEYERS, CRAIG (BR) NAS											
CALDWELL, MICHAEL (MC) RDO											
FAITH, LAUREN (US) RDO											
GREENE, ALAN (GE) RDO											
HAIGHT, SARA (NO) RDO											
HALL, JERRY (JD) RDO											
HIGGINS, PAUL (HS) RDO											
JOHNSON, CHRISTINE (CJ) RDO											
LEIS, BRETT (EI) RDO											
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	

THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT
(Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		ANP		NCT		AREA B			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGND	HOURS POSITION DUTIES ASGND	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
MAES, DAVID (UV) RDO											
NORTHAM, THOMAS (TT) RDO											
OWENS, DAWN (DO) RDO											
RAND, ERIC (EJ) RDO											
WHITE, BRYANT (WW) RDO											
WILLIAMS, CHRISTOPHER (OX) RDO											
WOLLERT, MICHAEL (MW) RDO											
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	
THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT (Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)											

Form 7230-4 (Dec 08)

Official Version

FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		AWP		SFO		OPERATIONS			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGNDE	HOURS POSITION DUTIES ASGNDE	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
MCMULLIN, DAWN (MN) 05:00 - 15:00	R	05:00	15:00	10+00			00+18	07+26			
NAUJOKS, FREDERICK (FN) 05:30 - 13:30	R	05:30	13:30	09+00			00+09	05+27			
		13:30	14:30								
OKUDA, JOSEPH (JH) 05:30 - 13:30	R	05:30	13:30	12+30			05+53	04+05			
		13:30	18:00								
SACHS, PETER (PZ) 06:00 - 14:00	R	06:00	14:00	08+00			00+11	05+16			
CALDWELL, DAVID (DC) 06:30 - 14:30	R	06:30	14:30	08+00			00+14	04+53			
FERLITO, DANIELE (DF) 06:30 - 14:30	R	06:30	14:30	08+00			00+41	05+22			
KIPKER, RUSSELL (KP) 06:30 - 14:30	R	06:30	14:30	11+30			05+52	03+14			
		14:30	18:00								
KNAACK, ROLF (RK) 06:30 - 14:30	R	06:30	14:30	08+00			00+00	06+18			
FINDLAY, NICOLE (NF) 07:00 - 15:00	R	07:00	15:00	08+00			00+12	03+54			
SHIRKEY, ALEXIS (LX) 08:30 - 16:30	R	08:30	16:30	08+00			00+04	02+46			
NUSS, JAMIE LEE (JN) 13:00 - 23:00	R	13:00	23:00	10+00			00+19	06+19			
DIETRICH, COLE (DZ) 13:30 - 21:30	R	13:30	21:30	08+00			00+00	05+32			
DESCALOPOULIS, BRENT (BD) 14:00 - 22:00	R	14:00	22:00	08+00			00+15	05+06			
HAMILTON, DANIEL (DH) 14:50 - 22:50	R	14:50	22:50	09+00			00+20	06+05			
		22:50	23:50								
SHELTON, ROBERT (XX) 14:50 - 22:50	R	14:50	22:50	08+00			00+07	05+10			
ROSSI, ANNA (AG) 16:00 - 00:00	8	15:30	16:00	08+30			00+21	05+16			
	R	16:00	00:00								
STICCA, BENJAMIN (YO) 16:05 - 00:05	R	16:05	00:05	10+00			00+19	06+27			
	8	00:05	02:05								
HART, MARI (HT) 07:00 - 15:00					08+00	Leave	00+00	00+00			
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	

THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT
(Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		AWP		SFO		OPERATIONS			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGNDE	HOURS POSITION DUTIES ASGNDE	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
SHORT, CHRISTOPHER (CS) 07:00 - 15:00					08+00	Leave	00+00	00+00			
MILLER, DAWN (RD) 07:00 - 15:00					08+00	Leave	00+00	00+00			
TRAHAN, CYNTHIA (NO) 13:00 - 23:00					10+00	Leave	00+00	00+00			
NELSON, WILLIAM (BN) 13:30 - 21:30					08+00	Leave	00+00	00+00			
PONO, SAMUEL (AX) RDO		13:30	21:30	08+00			00+06	04+44			
ORMAN, STEPHEN (SO) RDO		15:15	23:15	08+00			01+44	04+24			
CARTER, ERIC (EC) RDO		22:30	06:30	08+00			00+00	05+18			
HEARN, DAVID (JT) RDO		22:30	06:30	08+00			00+00	05+25			
ESCOBAR, PETER (PD) NAS											
HUGHES, ERIC (EH) NAS											
BOOTHBY, JACK (JJ) RDO											
CAWRSE, DAWN (AD) RDO											
CRISTALDI, JASON (JC) RDO											
ENGLISH, KRIS (KE) RDO											
HORACEK, MITCHELL (MH) RDO											
HOWARD, DAVI (AR) RDO											
HUNGERLAND, THOMAS (BT) RDO											
KIRK, MICHAEL (MK) RDO											
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	

THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT
(Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)

PERSONNEL LOG		REGION		FACILITY		AREA ID			DATE		
		AWP		SFO		OPERATIONS			MONTH: JUL	DAY: 06	YEAR: 2013
NAME	CODE	TIME ON	TIME OFF	HOURS ON DUTY	HOURS ON LEAVE	LEAVE TYPE	HOURS NON POSITION DUTIES ASGNDE	HOURS POSITION DUTIES ASGNDE	REMARKS FOR: ALL ABSENCES FROM FACILITY, TRNG, TDY AND NON POSITIONAL DUTIES		
LEYN, PATRICIA (PX) RDO											
LOZITO, THOMAS (TL) RDO											
NICHOLS, LEONARD (SP) RDO											
PAULUS, JOHN (JP) RDO											
PETRAS, WILLIAM (BL) RDO											
SHAH, ERIC (ES) RDO											
STEPHENSON, LISA (LI) RDO											
SUPERVISORY CERTIFICATE	NAME	CODE	TIME ON	TIME OFF	INTLS	NAME	CODE	TIME ON	TIME OFF	INTLS	
THE SIGNATURES ABOVE CERTIFY THAT THE ABOVE ENTRIES ARE CORRECT (Signatures and times in charge are noted on FAA Form 7230-4, Daily Record of Facility Operation)											

Form 7230-4 (Dec 08)

Official Version

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SECTION 6.

FAA Form(s) 7230-10, Position Log, or automated equivalent

FAA Form 7230-10 (6-94) NTSB 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

FAA Form 7230-10 (6-94) NPN 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)
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FAA Form 7230-10 (6-94) NSN: 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION IDENTIFIER	(3) POS	(4) DATE		
NCT	2B	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	AVERAGE COMBINED	
				(9) POSITION IDENTIFIER	(10) POSITION TYPE
0700		1240		Closed	
1241	BF	1259	C		
1300	JI	1443	C		
1444	UC	1518	C		
1519	JI	1632	C		
1633	JZ	1729	C		
1730	BF	1823	C		
1824	JI	1858	C		
1859	OO	1931	C		
1932	UC	1932	C		
1933	JI	2018	C		
2019	NJ	2045	C		
2046	EW	2056	C		
2057	VB	2058	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

FAA Form 7230-10 (6-94) NSN 0052-09-024-5102 Electronic Version (OmniForm)

FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION IDENTIFIER	(3) POS	(4) DATE		
NCT	2B	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE COMBINED	
				(9) POSITION IDENTIFIER	(10) POSITION TYPE
2059	OO	2127	C		
2128	EW	2147	C		
2148	UF	2159	C		
2200	NJ	2221	C		
2222	VB	2307	C		
2308	CB	2332	C		
2333	UP	0038	C		
0039	KA	0100	C		
0101	UP	0141	C		
0142	WH	0212	C		
0213	UP	0245	C		
0246	WH	0312	C		
0313	UP	0355	C		
0356	VB	0434	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (Omni-Form)
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FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)
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FAA Form 7230-10 (6-94) NTSB 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

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FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)
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FAA Form 7230-10 (6-94) NSN: 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION IDENTIFIER	(3) POS	(4) DATE		
NCT	2N	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE COMBINED	
				(9) POSITION IDENTIFIER	(10) POSITION TYPE
0700		1454		2B	AP
1455	OO	1543	C		
1544		1559		2B	AP
1600	AB	1707	C		
1708		1801		2B	AP
1802	DV	1854	C		
1855	EW	1939	C		
1940		2239		2B	AP
2240	JZ	2257	C		
2258	NJ	2342	C		
2343	VB	0004	C		
0005	KD	0038	C		
0039	VB	0111	C		
0112	KD	0141	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

FAA Form 7230-10 (6-94) NSN: 6052-00-024-6102 Electronic Version (OmniForm)

FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION IDENTIFIER		(3) POS	(4) DATE	
NCT	2N		AP	07/06/2013	
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	(9) WHERE COMPLETED	
				(10) POSITION IDENTIFIER	(11) POSITION TYPE
0142	VB	0217	C		
0218	KD	0249	C		
0250	VB	0332	C		
0333	CB	0403	C		
0404	WH	0523	C		
0524		0659		2B	AP

CODE:

C - ATCS/ATA
S - Supervisor/Staff Spec
T - Trainee/Developmental

M - Trainee/Developmental Monitoring
R - Trainee/Developmental Certification/
Evaluation

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)

FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

FAA Form 7230-10 (6-94) NNN 0052-00-024-6102 Electronic Version (OmniForm)
FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION CENTER	(3) POS	(4) DATE		
NCT	2W	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE COVERED	
				(9) POSITION CENTER	(10) POSITION TYPE
0700		1421		2B	AP
1422	AE	1503	C		
1504	JZ	1559	C		
1600	BF	1701	C		
1702	OO	1705	C		
1706	JI	1737	C		
1738	EW	1809	C		
1810	UC	1856	C		
1857	JZ	1943	C		
1944	EW	2018	C		
2019		2239		2B	AP
2240	UF	2309	C		
2310	WH	2349	C		
2350	UF	0023	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)

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POSITION LOG					
(1) FACILITY ID	(2) POSITION IDENTIFIER	(3) POS	(4) DATE		
NCT	2W	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE COMMANDED	
				(9) POSITION CENTER	(10) POSITION TYPE
0024	NJ	0053	C		
0054	UF	0127	C		
0128	KA	0205	C		
0206	CB	0239	C		
0240	KA	0316	C		
0317	WH	0332	C		
0333	NJ	0359	C		
0400	UF	0527	C		
0528	WH	0609	C		
0610		0659		2B	AP

CODE:
 C - ATCS/ATA
 S - Supervisor/Staff Spec
 T - Trainee/Developmental
 M - Trainee/Developmental Monitoring
 R - Trainee/Developmental Certification/
 Evaluation

FAA Form 7230-10 (6-34) NSN 0052-00-024-6102 Electronic Version (Cmn/Form)
 FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION CENTER	(3) POS	(4) DATE		
NCT	2Z	AP	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE COMBINED	
				(9) POSITION CENTER	(10) POSITION TYPE
0700		1240		B-MID	AP
1241	JI	1259	C		
1300	BF	1334	C		
1335	OO	1421	C		
1422	BF	1448	C		
1449	EW	1554	C		
1555	UC	1636	C		
1637	EW	1705	C		
1706	UC	1737	C		
1738	OO	1808	C		
1809	JI	1821	C		
1822	LL	1923	C		
1924	DV	2011	C		
2012	OO	2018	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

FAA Form 7230-10 (6-94) NPN 0052-00-024-6102 Electronic Version (OmniForm)

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POSITION LOG					
(1) FACILITY ID	(2) POSITION CENTER	(3) POS	(4) DATE		
NCT	2Z	AP	07/06/2013		
(5) TIME ON	(6) IN FALLS	(7) TIME OFF	(8) CODE	WHERE COMBARD	
				(9) POSITION CENTER	(10) POSITION TYPE
2019	JZ	2056	C		
2057	DV	2111	C		
2112	DQ	2134	C		
2135	VB	2150	C		
2151	DV	2159	C		
2200	OO	2218	C		
2219	KA	2259	C		
2219	UP	2259	T		
2300	KD	2332	C		
2333	KA	0004	C		
0005	CB	0028	C		
0029	WH	0105	C		
0106	CB	0128	C		
0129	NJ	0158	C		
CODE: C - ATCS/ATA S - Supervisor/Staff Spec T - Trainee/Developmental M - Trainee/Developmental Monitoring R - Trainee/Developmental Certification/ Evaluation					

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FOR OFFICIAL USE ONLY Public Availability to be determined under 5 U.S.C. 552

POSITION LOG					
(1) FACILITY ID	(2) POSITION CENTER	(3) POS	(4) DATE		
NCT	BC	SI	07/06/2013		
(5) TIME ON	(6) INITIALS	(7) TIME OFF	(8) CODE	WHERE OCCURRED	
				(9) POSITION CENTER	(10) POSITION TYPE
0700		1240		BS	SI
1241	AE	1344	C		
1345		1405		Closed	
1406	BF	1420	C		
1421		1626		Closed	
1627	EW	1633	C		
1634		2001		Closed	
2002	OO	2008	C		
2009		0659		Closed	

CODE:
C - ATCS/ATA
S - Supervisor/Staff Spec
T - Trainee/Developmental
M - Trainee/Developmental Monitoring
R - Trainee/Developmental Certification/
Evaluation

FAA Form 7230-10 (6-94) NSN 0052-00-024-6102 Electronic Version (OmniForm)
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POSITION LOG					
Fac ID: SFO			Log Date: 7/6/2013		
Pos ID: LC			Pos Type: LC		
TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700	EH	0930	C		
0931	PD	1229	S		
1230	FN	1334	C		
1335	DF	1413	C		
1414	JH	1502	C		
1503	DC	1606	C		
1607	PZ	1715	C		
1716	JH	1717	C		
1718	JH	1831	C		
1718	KP	1831	T		
1832	JH	1835	C		
1836	DC	2024	C		
2025	JN	2152	C		
2153	XX	2301	C		
2302	DZ	0011	C		
0012	AG	0121	C		
0122	DH	0244	C		
0245	DZ	0405	C		
0406	JN	0537	C		
0538	EC	0659	C		

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POSITION LOG					
Fac ID: SFO		Log Date: 7/6/2013			
Pos ID: LCA		Pos Type: LA			
TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700		1338		LC	LC
1339	DC	1416	C		
1417	FN	1454	C		
1455	DF	1523	C		
1524	DF	1612	C		
1524	KP	1612	T		
1613	NF	1728	C		
1729	LX	1832	C		
1833	DF	2037	C		
2038	AX	2058	C		
2059		2245		LC	LC
2246	AX	2357	C		
2358	BD	0054	S		
0055	DZ	0208	C		
0209	JN	0325	C		
0326	AX	0405	C		
0406	XX	0434	C		
0435		0457		LC	LC
0458	AG	0631	C		
0632		0659		LC	LC

FAA Form 7230-10 (Electronic)

POSITION LOG

Fac ID: SFO
Pos ID: CD

Log Date: 7/6/2013
Pos Type: CD

TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700		1229		GC2	GC
1230	PD	1259	S		
1300	PZ	1359	C		
1400	NF	1528	C		
1529	FN	1640	C		
1641	DC	1802	C		
1803	PZ	1911	C		
1912	KP	1913	C		
1914	PZ	2021	C		
2022		2029		OS/CIC	SC
2030	DZ	2216	C		
2217		2231		GC2	GC
2232	AG	2259	C		
2300	AG	2332	C		
2333	XX	0040	C		
0041	AX	0123	C		
0124	XX	0218	C		
0219	AG	0252	C		
0253	YO	0327	C		
0328	DH	0434	C		

FAA Form 7230-10 (Electronic)

POSITION LOG

Fac ID: SFO
Pos ID: CD

Log Date: 7/6/2013
Pos Type: CD

[illegible]

FAA Form 7230-10 (Electronic)

POSITION LOG					
Fac ID: SFO		Log Date: 7/6/2013			
Pos ID: OS/CIC		Pos Type: SC			
TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700	EH	0930	C		
0931	PD	1301	S		
1302	MN	1329	C		
1330	RK	1459	S		
1500	MN	1531	C		
1532	JH	1546	C		
1547	RK	1808	S		
1809	MN	1829	C		
1830	RK	1917	S		
1918	NF	1932	C		
1933	RK	2110	S		
2111	BD	2248	S		
2249	SO	0100	S		
0101	BD	0218	S		
0219	SO	0320	S		
0321	BD	0433	S		
0434	SO	0542	S		
0543	JT	0659	S		

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POSITION LOG					
Fac ID: SFO		Log Date: 7/6/2013			
Pos ID: TMDC1		Pos Type: TM			
TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700		1159		OS/CIC	SC
1200	MN	1301	C		
1302	MN	1329	C		
1330	MN	1414	C		
1415		1458		OS/CIC	SC
1459	MN	1459	C		
1500	MN	1531	C		
1532	MN	1646	C		
1647		1700		OS/CIC	SC
1701	MN	1701	C		
1702		1743		OS/CIC	SC
1744	MN	1808	C		
1809	MN	1829	C		
1830	MN	2022	C		
2023		0659		OS/CIC	SC

FAA Form 7230-10 (Electronic)

AA R214

POSITION LOG

Fac ID: SFO
Pos ID: GC2

Log Date: 7/6/2013
Pos Type: GC

TIME ON	Initials	TIME OFF	Code	Where Combined To:	
				Pos ID	Pos Type
0700		1229		LC	LC
1230	JH	1332	C		
1333	KP	1441	C		
1442	PZ	1531	C		
1532	LX	1646	C		
1647	MN	1653	C		
1654	DF	1813	C		
1814	FN	1817	C		
1818	NF	1911	C		
1912	LX	1938	C		
1939	FN	2022	C		
2023	MN	2058	C		
2059	AX	2156	C		
2157	DH	2309	C		
2310	YO	0012	C		
0013	JN	0121	C		
0122	YO	0202	C		
0203	AX	0252	C		
0253	XX	0325	C		
0326	AG	0422	C		

FAA Form 7230-10 (Electronic)

POSITION LOG

Fac ID: SFO
Pos ID: GC2

Log Date: 7/6/2013
Pos Type: GC

[illegible]

FAA Form 7230-10 (Electronic)

AA R214

POSITION LOG

Fac ID: SFO
Pos ID: FD

Log Date: 7/6/2013
Pos Type: FD

[illegible]

FAA Form 7230-10 (Electronic)

FAA Form 7230-10 (Electronic)

AA R214

POSITION LOG

Fac ID: SFO
Pos ID: CC

Log Date: 7/6/2013
Pos Type: CC

[illegible]

FAA Form 7230-10 (Electronic)

FAA Form 7230-10 (Electronic)

AA R214

POSITION LOG

Fac ID: SFO
Pos ID: GC1

Log Date: 7/6/2013
Pos Type: GC

[illegible]

FAA Form 7230-10 (Electronic)

AA R214

POSITION LOG

Fac ID: SFO

Log Date: 7/6/2013

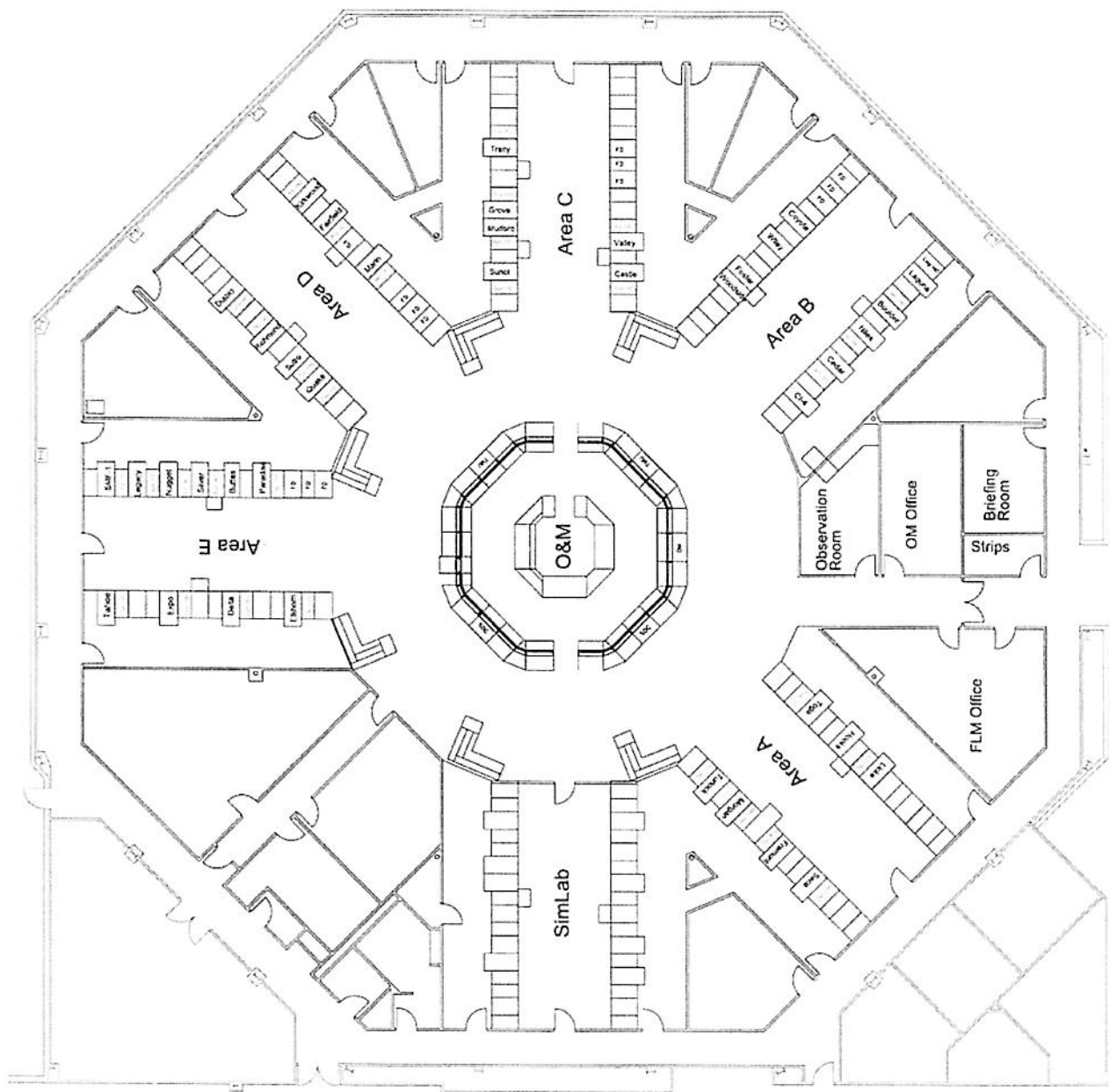
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Pos Type: GH

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FAA Form 7230-10 (Electronic)

SECTION 7.
Facility Layout Chart(s)



Northern California TRACON

SFO-ATCT-0027
AAR214

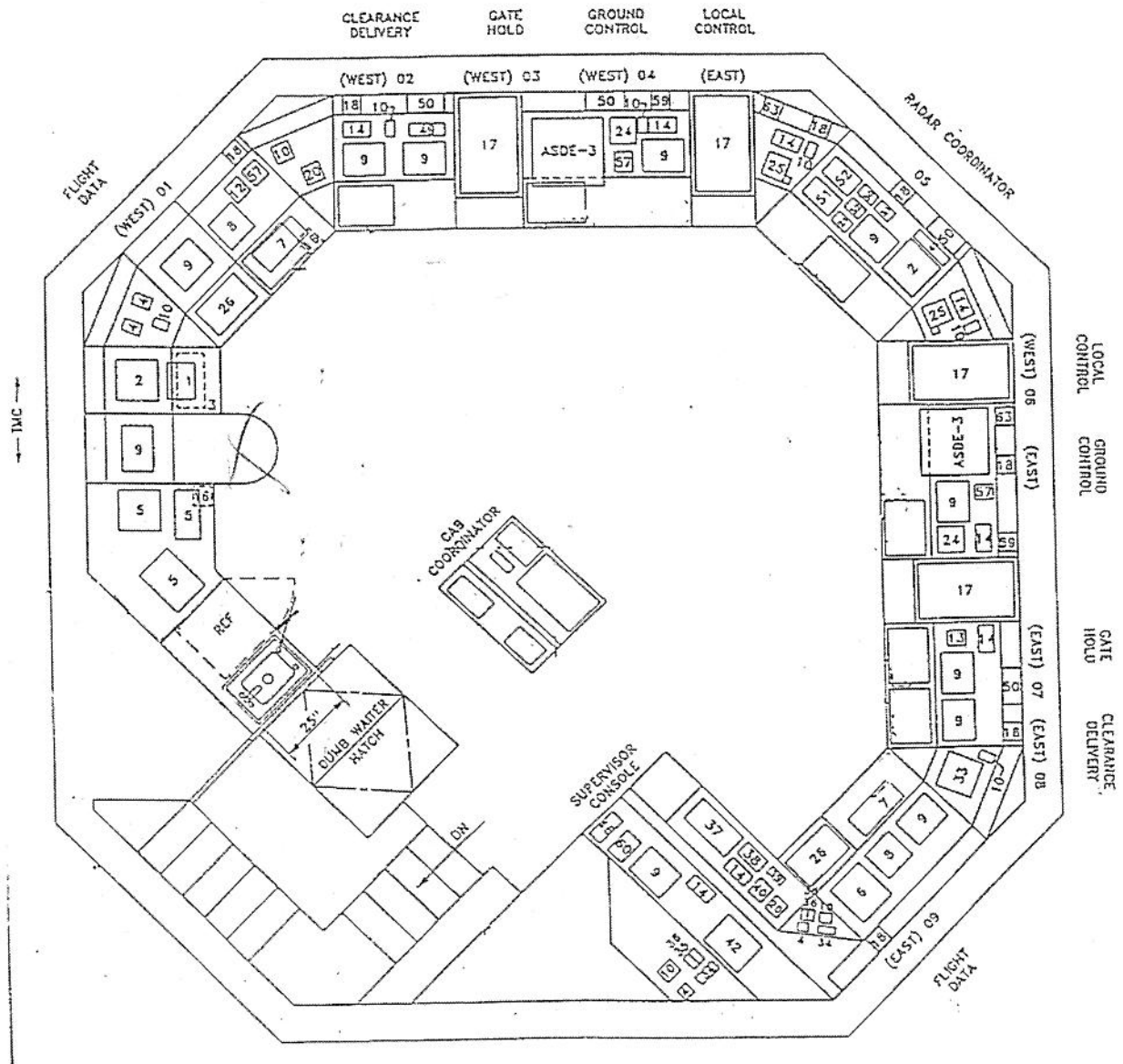
Northern California TRACON
Facility Layout Chart
Legend

Area A		Area B		Area C		Area D		Area E	
Licke	1L	Coyote	2P	Tracy	3J	Diablo	4D	Tahoe	5T
Hooks	1H	Wiley	2E	Grove	3G	Richmond	4R	Expo	5X
Toga	1T	Foster	2F	Mulford	3M	Sutro	4S	Delta	5D
Seca	1S	Woodside	2W	Sunol	3S	Quake	4Q	Elkhorn	5E
Fremont	1F	Laguna	2G	Valley	3Y	Kirkwood	4K	Legacy	8Y
Morgan	1M	Boulder	2B	Castle	3K	Fairfield	4F	Nugget	8N
Turlock	1Q	Niles	2N			Marin	4A	Silver	8S
		Cedar	2Z					Buttes	5B
								Paradise	5P

7/1/98

APPENDIX 10. OCCUPANT EMERGENCY PLAN FOR SAN FRANCISCO CONTROL TOWER

FLOOR PLAN - TOWER CAB



SECTION 8.
Airport Diagram

13178 AIRPORT DIAGRAM

AL-375 (FAA)

 SAN FRANCISCO INTL (SFO)
 SAN FRANCISCO, CALIFORNIA
FIELD
ELEV
13
 JANUARY 2010
 ANNUAL RATE OF CHANGE
 0.1° W

 NOTE: Several runway hold position
 signs are on the right rather
 than the left side of the taxiways

B/A: BOARDING AREA

SW-2, 27 JUN 2013 to 22 AUG 2013

 CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
 READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

 RWY 01L-19R
 PCN 90 F/B/X/T
 RWY 01R-19L
 PCN 100 F/B/X/T
 RWY 10L-28R
 PCN 80 F/B/X/T
 RWY 10R-28L
 PCN 80 F/B/X/T
FIRE STATION
NO. 1FIRE STATION
NO. 2FIRE STATION
NO. 3GENERAL
AVIATION

USCG

122°23'W

122°24'W

122°22'W

37°38'N

37°37'N

 ATIS
 113.7 115.8
 118.85 135.45
 SAN FRANCISCO TOWER
 120.5 269.1
 GND CON
 121.8
 CLNC DEL
 118.2
13178
AIRPORT DIAGRAM

SFO-ATCT-0027

 SAN FRANCISCO, CALIFORNIA
 SAN FRANCISCO INTL (SFO)

DIAGRAM NOT TO SCALE

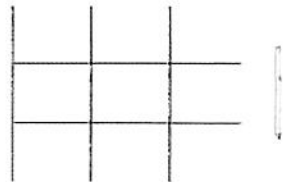
AAR214

SECTION 9.

Flight Progress Strip(s) and/or In-Flight Contact Record(s)

Northern California TRACON

AAR214	4166	A1810	IFR	
2	PYE 294	025		
H/B772/Q	PYE		KSFO	OTCAS II EQUIPPED
454				



SECTION 10.
Transcription of Voice Recording(s)



**Federal Aviation
Administration**

Memorandum

Date: July 09, 2013

To: Aircraft Accident File SFO-ATCT-0027

From: Northern California Terminal Radar Approach Control Facility

Subject: INFORMATION: Partial Transcript
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013

This transcription covers the Northern California Terminal Radar Approach Control Facility (TRACON) 2B AP position for the time period from July 06, 2013, 1806 UTC, to July 06, 2013, 1823 UTC.

Agencies Making Transmissions

Abbreviations

3772, AAR214

AAR214

Northern California TRACON Boulder RADAR

2B

I certify that the following is a true transcription of the recorded conversations pertaining to the subject aircraft accident involving AAR214.

Janette Hardy
Support Specialist from Quality Control
Northern California TRACON

1806

(1807-1810)

1811

1811:05 AAR214 norcal approach good morning asiana two one four direct
lozit one one thousand

1811:13 2B asiana two one four heavy norcal approach depart san
francisco v o r heading one four zero vector visual
approach two eight left

1811:19 AAR214 uh after san francisco heading one four zero visual two
eight left

1811:25 2B uh two eight left affirmative

SFO-ATCT-0027
AAR214

1811:27 AAR214 thank you
1812
1813
1813:55 2B asiana two one four heavy reduce speed to two one zero

1813:57 AAR214 uh speed two one zero asiana two one four
1814
1815
1816
1816:50 2B asiana two one four heavy descend and maintain niner
thousand contact approach one three five point six five
good day

1816:57 AAR214 uh descend nine thousand one two five six five asiana
two one four good day
1817

1817:03 2B uh just to verify one tree five point six five

1817:05 AAR214 thirty five sixty five thank you

1817:07 2B thank you have a good day
1818
(1819-1822)
1823

End of Transcript



Federal Aviation Administration

Memorandum

Date: July 09, 2013
To: Aircraft Accident File SFO-ATCT-0027
From: Northern California Terminal Radar Approach Control Facility
Subject: **INFORMATION:** Partial Transcript
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013


This transcription covers the Northern California Terminal Radar Approach Control Facility (TRACON) 2W AP position for the time period from July 06, 2013, 1812 UTC, to July 06, 2013, 1831 UTC.

Agencies Making Transmissions

Abbreviations

B772, AAR214	AAR214
Northern California TRACON Woodside RADAR	2W

I certify that the following is a true transcription of the recorded conversations pertaining to the subject aircraft accident involving AAR214.


Janette Hardy
Support Specialist from Quality Control
Northern California TRACON

1812
(1813-1816)

1817
1817:15 AAR214 approach good morning asiana two one four heading one
four zero nine thousand speed of two one zero

1817:21 2W asiana two one four heavy norcal approach caution wake
turbulence you'll be following a heavy boeing triple
seven

1817:27 AAR214 roger asiana two one four
1818

1819
1819:25 2W asiana two one four heavy descend and maintain six
thousand turn left heading one zero zero

SFO-ATCT-0027
AAR214

SFO-ATCT-0027
AAR214

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...

1819:29 AAR214 heading one zero zero descend six thousand asiana two
one four
1820

1820:57 2W asiana two one four heavy descend and main four thousand
turn left heading zero three zero

1821:01 AAR214 heading zero three zero descend four thousand asiana two
one four

1821:49 2W asiana two one four heavy san francisco airport nine to
ten o'clock one seven miles do you have it in sight

1821:56 AAR214 okay runway in sight

1821:57 2W asiana two one four heavy turn left heading three one
zero cleared visual approach runway two eight left

1822:02 AAR214 heading three one zero cleared visual two eight left
asiana two one four
1823

1823:17 2W asiana two one four heavy reduce speed to one eight zero
maintain that to a five mile final there's traffic
behind and to the right that does have you in sight

1823:23 AAR214 roger speed one eight zero (unintelligible) final five
miles asiana two one four
1824
1825

1825:36 2W asiana two one four heavy contact san francisco tower
one two zero point five

1825:39 AAR214 (unintelligible) five asiana two one four good day
1826
(1827-1830)
1831

End of Transcript

SFO-ATCT-0027
AAR214



Federal Aviation Administration

Memorandum

Date: July 09, 2013

To: Aircraft Accident File SFO-ATCT-0027

From: San Francisco Airport Traffic Control Tower

Subject: **INFORMATION**: Full Transcript
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013


This transcription covers the San Francisco Airport Traffic Control Tower (ATCT) LC LC position for the time period from July 06, 2013, 1815 UTC, to July 06, 2013, 1851 UTC.

Agencies Making Transmissions

Abbreviations

Local Control	LC
United 697	UAL697
Delta 1447	DAL1447
United 694	UAL694
Unknown	UNKNOWN
United 870	UAL870
United 397	UAL397
America West 466	AWE466
Skywest 5492	SKW5492
American 1486	AAL1486
Air Canada 761	ACA761
United 885	UAL885
Skywest 6263	SKW6263
All Nippon 8	ANA8
Skywest 5427	SKW5427
N73SF	N73SF
Skywest 6389	SKW6389
Asiana 214	AAR214
United 223	UAL223
Skywest 5452	SKW5452
N737JD	N737JD
Horizon 635	QXE635
SFO Airport Rescue 33	RESCUE33
SFO Airport Rescue 11	RESCUE11
SFO Airport Rescue 10	RESCUE10
SFO Airport MOBILE 101	MOBIL101
SFO Airport Rescue 37	RESCUE37
SFO Airport Mobile 244	MOBIL244
SFO Airport Rescue 88	RESCUE88
Alaska 244	ASA244

I certify that the following is a true transcription of the recorded conversations pertaining to the subject aircraft accident involving AAR214.

10 11 12

1 2 3
Andy Richards
Air Traffic Manager
San Francisco ATCT

1815
(1816-1819)
1820

1820:31 LC united six ninety seven what's your gate

1820:33 UAL697 ninety three

1820:35 LC united six ninety seven roll down to quebec hold short
runway two eight left

1820:38 UAL697 hold uh short of two eight left on quebec united six
ninety seven

1820:42 LC delta fourteen forty seven no delay traffic's
approaching a two mile final one right wind one eight
zero at seven cleared for take off

1820:47 DAL1447 one right one right cleared for take off delta fourteen
forty seven

1820:51 UAL694 san francisco tower united six ninety four two miles
outside of tango two eight right

1820:56 LC united six ninety four san francisco tower runway two
eight right cleared to land

1820:59 UAL694 two eight right cleared to land two eight right united
six ninety four

1821

1821:02 LC united three ninety seven cross runway two eight left
contact ground point eight

1821:07 UAL697 (unintelligible) cross two eight left and over to ground
united (unintelligible)

1821:09 LC united eight seventy heavy turn left at uh quebec

contact ground on point eight

1821:14 UNKNOWN blocked

1821:16 LC united eight seventy heavy turn left at quebec contact ground point eight

1821:19 UAL870 quebec ground point eight united eight seventy heavy

1821:22 LC united six ninety seven give way to your company there exiting at quebec cross runway two eight left and contact ground on point eight

1821:29 UAL697 cross two eight left and over to ground united six ninety seven thanks

1821:32 LC united three ninety seven at taxiway delta cross runway two eight left contact ground on point eight

1821:36 UAL397 cleared to cross uh two eight left delta ground point eight and we were stepped on three ninety seven

1821:41 LC okay no problem

1821:42 UNKNOWN it's my fault

1821:44 LC cactus four sixty six san francisco tower runway one right line up and wait traffic's landing westbound

1821:48 AWE466 line up and wait one right cactus four sixty six

1821:51 LC delta fourteen forty seven contact norcal departure see ya

1821:54 DAL1447 going to departure see ya later delta fourteen forty seven

1822:00 SKW5492 skywest fifty four ninety two two eight left

1822:02 LC skywest fifty four ninety two san francisco tower runway two eight left cleared to land caution wake turbulence

seven five seven off your right hand side for the parallel

1822:08 SKW5492 cleared to land two eight left skywest fifty four ninety two

1822:21 LC cactus four sixty six take it uh on the roll runway one right cleared for take off

1822:26 AWE466 all right we'll keep it rolling and cleared for takeoff one right cactus four sixty six

1822:30 LC american fourteen eighty six san francisco tower runway one right line up and wait traffic will land westbound

1822:34 AAL1486 one right line up and wait american fourteen eighty six

1822:38 LC air canada seven sixty one keep it rolling across runway two eight left contact ground on one two one point eight traffic three mile final

1822:44 ACA761 (unintelligible) to cross twenty eight left for air canada seven sixty one

1823

1823:09 LC united eight eight five heavy san francisco tower cross runway one left runway one right hold short of two eight left traffic in position on one right

1823:17 UAL885 uh cross one left one right to two eight left united eight eight five

1823:22 LC cactus four sixty six contact norcal departure good day

1823:25 AWE466 cactus four sixty six so long

1823:43 LC air canada seven six one contact ground on point eight

1823:59 SKW6263 tower skywest sixty two sixty three uh inside the bridge two eight right

1824

1824:03 LC skywest sixty two sixty three san francisco tower runway two eight right cleared to land caution wake turbulence

seven five seven just landed your runway and heavy
triple seven off your left hand side for the parallel

1824:14	SKW6263	all right cleared to land two eight right skywest sixty two sixty three
1824:21	ANA8	san francisco tower all nippon eight heavy on final two eight left
1824:27	LC	american fourteen eighty six no delay traffic's on a two and a half mile final wind one nine zero at seven runway one right cleared for take off
1824:34	AAL1486	cleared for take off one right american fourteen eighty six
1824:36	LC	all nippon eight heavy san francisco tower runway two eight left cleared to land
1824:39	ANA8	two eight left cleared to land all nippon eight heavy
1824:42	LC	skywest fifty four ninety two contact ground point eight
1824:45	SKW5492	point eight skywest fifty four ninety two
1824:47	LC	united six ninety four hold short runway two eight left
1824:50	UAL694	hold short two eight left united six ninety four
1824:52	LC	skywest fifty four twenty seven san francisco tower runway one right line up and wait
1824:57	SKW5427	line up and wait on one right skywest fifty four twenty seven
1825:00	N73SF	tower helicopter seven three sierra foxtrot gap departure
1825:06	LC	helicopter seven three sierra foxtrot uh san francisco tower gap departure approved squawk zero three six three

1825:14 N73SF and tower you're breaking up three sierra foxtrot

1825:17 LC copter three sierra foxtrot gap departure approved do not overfly the heavy seven four seven under tow

1825:25 SKW6389 hey tower skywest sixty three eighty nine coming up on the bridge for the right

1825:28 LC skywest sixty three eighty nine san francisco tower runway two eight right cleared to land caution wake turbulence heavy triple seven ahead to your left for the parallel

1825:37 LC american fourteen eighty six contact norcal departure

1825:40 AAL1486 american fourteen eighty six

1825:44 LC skywest sixty three eighty nine san francisco tower runway two eight right cleared to land caution wake turbulence heavy triple seven over the bridge for the parallel

1825:52 SKW6389 cleared to land two eight right the traffic's in sight skywest sixty three eighty nine

1825:56 AAR214 good morning asiana two one four final seven miles south two eight left

1826 1826

1826:02 LC skywest fifty four twenty seven hold in position taxi up to the power point on departure fly heading of uh zero one zero

1826:12 N73SF tower helicopter seven three sierra foxtrot gap departure

1826:15 LC helicopter seven three sierra foxtrot san francisco tower gap departure approved squawk zero three six three

1826:22 N73SF zero three six three gap three sierra foxtrot

1826:24 LC skywest fifty four twenty seven on departure fly heading zero one zero runway one right cleared for take off without delay

1826:30 SKW5427 take off without delay skywest fifty four twenty seven

1826:32 LC united two twenty three san francisco tower runway one right line up and wait and we might be able to get you out this hole

1826:38 UAL223 line up and wait runway one right united two twenty three

1826:41 LC all nippon eight heavy contact ground point eight

1826:43 ANA8 point eight all nippon eight heavy

1826:46 LC skywest sixty two sixty three hold short runway two eight left

1826:50 SKW6263 short two eight left skywest sixty two sixty three

1826:52 LC united two twenty three just hold in position you'll be in the next hole

1826:55 UAL223 sounds good united two twenty three hold in position uh one right

1826:59 AAR214 tower asiana two one four short final
1827

1827:08 LC asiana two one four heavy san francisco tower runway two eight left cleared to land

1827:10 AAR214 cleared to land two eight left asiana two one four

1827:13 LC skywest fifty four twenty seven fly runway heading and contact norcal departure

1827:17 SKW5427 going to departure skywest fifty four twenty seven good day

1827:21 UAL885 tower united eight eight five

1827:23 LC united eight five uh tower

1827:26 UAL885 united eight eight five at the end uh we might need a few more minutes just a heads up

1827:30 LC united eight eight five roger hold uh short of two eight left let me know when you're ready

1827:34 UAL885 two eight left united eight eighty five

1827:36 SKW5452 san francisco tower skywest fifty four fifty two uh quiet bridge visual two eight right

1827:40 LC skywest fifty four fifty two san francisco tower runway two eight right cleared to land

1827:45 SKW5452 cleared to land two eight right skywest fifty four fifty two

1827:54 LC copter three sierra foxtrot radar contact passing six hundred

1827:58 N73SF six hundred three sierra foxtrot
1828

1828:08 LC skywest sixty three eighty nine go around

1828:10 SKW6389 go around skywest sixty three eighty nine

1828:11 UNKNOWN (unintelligible) one thousand five hundred feet over san carlos

1828:14 LC skywest sixty three eighty nine fly heading two eight zero maintain three thousand

1828:18 SKW6389 zero three thousand skywest sixty three eighty nine

1828:26 AAR214 uh tower tower asiana two one four

1828:29 LC asiana two fourteen heavy emergency vehicles are responding

1828:33 AAR214 asiana two one four

1828:35 LC emergency vehicles are responding

1828:38 AAR214 uh uh (unintelligible) uh asiana (unintelligible)

1828:45 LC cessna seven three seven juliet delta san francisco tower remain clear of the san francisco bravo airspace contact san carlos tower

1828:51 N737JD seven juliet delta contacting san carlos tower and uh will remain clear

1828:57 LC cessna helicopter three sierra foxtrot leaving the bravo airspace in two miles radar service terminated squawk maintain v f r frequency change approved

1829

1829:03 UNKNOWN please show all runways closed for the time being please

1829:06 LC all runways are closed the airport is closed san francisco tower

1829:10 UNKNOWN roger that

1829:11 LC horizon six thirty five san francisco tower

1829:15 AAR214 tower two one four

1829:16 LC asiana two fourteen heavy san francisco tower

1829:18 AAR214 (unintelligible)

1829:23 QXE635 horizon six thirty five's going around

1829:24 LC horizon six thirty five fly heading two six five maintain three thousand one hundred

1829:28 QXE635 two six five three thousand one hundred horizon six thirty five

1829:32 AAR214 (unintelligible)

1829:33 LC asiana two fourteen heavy emergency vehicles are responding they have everyone on their way

1829:37 AAR214 (unintelligible)

1829:39 LC skywest fifty four fifty two san francisco tower go around

1829:42 SKW5452 going around skywest fifty four fifty two

1829:46 LC skywest fifty four fifty two fly heading two eight zero maintain three thousand

1829:49 SKW5452 two eight zero at three thousand skywest fifty four fifty two

1829:56 LC horizon six thirty five fly heading two six five maintain three thousand one hundred

1830:00 QXE635 yes sir two six five three thousand one hundred horizon six three five

1830:03 LC horizon six thirty five contact norcal departure on one three five point one

1830:07 QXE635 thirty five one horizon six thirty five

1830:09 LC skywest fifty four fifty two contact norcal departure on one three five point one

1830:13 SKW5452 thirty five one skywest fifty four fifty two

1830:20 SKW6389 skywest sixty three eighty nine we'll go to san jose

1830:24 LC skywest sixty three eighty nine roger and uh contact norcal departure

1830:27 SKW6389 departure uh frequency for that please

1830:29 LC one three five point one skywest sixty three eighty nine

1830:30 SKW6389 good day

1830:42 RESCUE33 san francisco tower rescue three three on mike to cross
one left one right

1830:47 LC rescue three three san francisco tower proceed to the
scene cross all active runways

1830:50 RESCUE11 san francisco tower rescue eleven is crossing with
rescue three three one left one right

1830:57 LC rescue eleven san francisco tower proceed as requested
cross all runways

1831 1831:33 RESCUE33 san francisco tower rescue three three and rescue eleven
clear of the ones

1831:37 LC rescue three rescue eleven roger

1831:41 LC the rescue vehicle at taxiway foxtrot san francisco
tower

1831:46 RESCUE10 san francisco tower this is rescue ten at foxtrot to
cross one left one right

1831:49 LC rescue ten san francisco tower cross runway one left
cross runway one right

1831:53 RESCUE10 rescue ten crossing one left crossing one right

1832

1833

1833:39 UAL885 tower united eight eight five

1833:40 LC say again

1833:43 UAL885 tower this is united eight eight five we are holding
short of two eight left uh we see people and i think
that we should uh (unintelligible) immediate attention
they are alive and walking around

1833:53 LC united eight eight five heavy roger

1833:58 LC i think you said you said uh people are just walking
outside the airplane right now
1834

1834:01 UAL885 yeah uh some uh some people (unintelligible) look like
they're struggling

1834:05 LC roger we have emergency vehicles responding

1834:07 UAL885 uh thank you

1834:16 UAL885 right out near the two eight right number on the uh
right side of the runway

1834:23 LC roger you are reporting a person at the uh two eight
right numbers

1834:27 UAL885 excuse me the two eight left numbers between the runways
there are people right right uh adjacent to the numbers
i we can see about two or three people that are moving
and uh and uh apparently survived

1834:36 LC roger

1834:50 MOBIL101 and tower mobile one oh one on foxtrot to cross one left
one right

1834:53 LC mobile one zero one san francisco tower cross runway one
left cross runway one right

1834:57 MOBIL101 cross one left runway one right mobile one oh one and
company
1835

1835:22 MOBIL101 tower mobile one oh one and company clear of the ones

1835:28 LC mobile one zero one and company roger
1836

1836:29 LC down so all right status is current everything is shut
down no transitions no traffic uh lighting is on radar
alignment's with oakland west end is uh ours which we're
not doing anything with right now (unintelligible)
asiana two fourteen heavy's on two eight left he's got
everything deployed over there we got multiple rescue
vehicles everybody's coming out we already rang i don't

have any of their call signs but they're all out over there i just i gave them a blanket thing to go to the crash scene blanket thing to go to the crash scene alright yup loaded on one right short of two eight left short of two eight left i haven't done anything with anyone okay

1837

1837:07 RESCUE37 san francisco tower this is uh rescue thrity seven permission to cross nineteen right nineteen left on charlie

1837:18 LC rescue thirty company crossing ones alright okay got it

1837:20 RESCUE37 uh it's carbon uh crossing the ones

1837:24 LC you got everything got it you good okay alright
1838

1838:02 RESCUE37 tower this is uh rescue thirty seven permission to cross at papa permission to cross two eight right two eight left

1838:11 LC rescue thirty seven approved

1838:14 RESCUE37 rescue thirty seven crossing two eights

1838:18 LC rescue thirty seven cross the two eights proceed to the incident

1838:24 MOBIL244 tower mobile two four four uh and the spots to cross uh two eight right

1838:29 LC mobile two four four and company cross two eight right

1838:31 MOBIL244 two eight right at papa two four four and company
1839

(1840-1841)

1842

1842:36 RESCUE88 uh san francisco tower this is rescue eighty eight confirm that i'm uh i'm clear to cross runways

1842:42 LC rescue eighty eight field is yours

1842:44 RESCUE88 uh copy that eighty eight

1843

1844

1844:39 UAL223 and tower united two two three

1844:46 LC united two two three

1844:47 UAL223 permission to shut down the engines here

1844:49 LC yeah i recommend everybody out there shut down the engines we'll give all about a ten minute heads up if we're gonna be able to get departures out off the ones but we're trying uh focusing on the issue right now uh sorry about that if united six ninety four and sixty two sixty three skywest we're uh trying to work on approval to get you guys across but we need that from the city right now

1845

1845:07 SKW6263 skywest sixty two skywest sixty two sixty three uh we understand we'll hold short and uh we'll wait as long as it takes

1845:15 LC yeah that's fine i wouldn't uh shut yours down though because if i can get you across and out of the way i am definitely going to we're but working that out with the city right now

1845:22 SKW6263 we'll keep (unintelligible) monitoring

1845:24 LC okay for united two uh correction six ninety four we'll let you know

1845:27 UAL694 roger

1845:29 ASA244 uh tower for alaska two forty four number three at one right we'd like to go back to the gate when we can work it out

1845:35 LC alaska two forty four roger that um we'll work that out uh in the meantime i would suggest you shut them down or at least shut one down to save some out there um because it's going to be a while before i can get anybody back to the gates

1845:46 ASA244 not a problem we'll shut em down thanks

SFO-ATCT-0027
AAR214

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...

1845:48 LC thanks
1846
(1847-1850)
1851

End of Transcript



Federal Aviation Administration

Memorandum

Date: August 01, 2013

To: Aircraft Accident File SFO-ATCT-0027

From: San Francisco Airport Traffic Control Tower

Subject: **INFORMATION:** Partial Transcript
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013

This transcription covers the San Francisco Airport Traffic Control Tower (ATCT) GC2 GC position for the time period from July 06, 2013, 1823 UTC, to July 06, 2013, 1842 UTC.

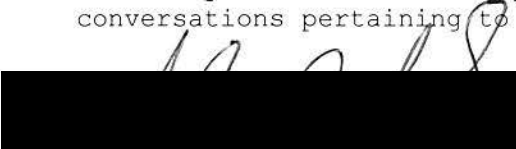
Agencies Making Transmissions

Ground Control
Frontier 830
United 893

Abbreviations

GC
FFT830
UAL893

I certify that the following is a true transcription of the recorded conversations pertaining to the subject aircraft accident involving AAR214.


Andy Richards
Air Traffic Manager
San Francisco ATCT

1823
(1824-1827)

1828
1828:04 GC everybody calling stand by do not taxi frontier eight
thirty hold your position

1828:10 FFT830 hold position frontier eight thirty

1828:39 GC everybody on frequency stand by do not call
1829

1829:08 GC everybody do not call ground just stand by do not call
1830
1831
1831:05 GC we're stopping all departures the airport's closed l x
1832

1832:47 GC everybody call on ground it's gonna be a while just hold
your position and do not acknowledge

1833

1833:19 GC all right status is uh up to date the airport's closed
due to accident weather is v f r landings appropriate
verifying with oakland west end we have obviously we're
not doing anything with it at this time you're two
eights and ones and traffic um everyone's holding got a
uh aircraft at the right other than that we are not
moving with anything and i think people are coming out
now

1833:56 GC i missed what he said um but yeah everything's taken
care of for now (unintelligible)

1834

1834:52 GC is there any rescue vehicles on ground frequency there's
aircraft or there's people at the approach end that need
help at the uh numbers of the approach of runway two
eight

1835

1836

1836:06 UAL893 uh ground united eight nine three

1836:07 GC united eight ninety three go ahead

1836:09 UAL893 are there any airport restrictions to taxiing right now

1836:12 GC united eight ninety three where are you at

1836:14 UAL893 uh we're at uh ninety four

1836:16 GC yeah the airport is closed for an accident so it's gonna
be a while

1836:23 UAL893 uh can you describe the accident to us

1836:26 GC no just uh don't transmit anymore if you have any
questions call your company

1837

(1838-1841)

1842

End of Transcript



Federal Aviation Administration

Memorandum

Date: July 31, 2013
To: Aircraft Accident File SFO-ATCT-0027
From: San Francisco Airport Traffic Control Tower
Subject: **INFORMATION:** Partial Transcript
Aircraft Accident, AAR214
San Francisco, CA, July 06, 2013

This transcription covers the San Francisco Airport Traffic Control Tower (ATCT) CD CD position for the time period from July 06, 2013, 1823 UTC, to July 06, 2013, 1835 UTC.


Agencies Making Transmissions

NCT Woodside Sector
Clearance Delivery
San Carlos ATCT

Abbreviations

WOODSIDE
CD
SQL

I certify that the following is a true transcription of the recorded conversations pertaining to the subject aircraft accident involving AAR214.


Andy Richards
Air Traffic Manager
San Francisco ATCT

1823
(1824-1827)

1828
1828:44 WOODSIDE this is woodside

1828:46 CD san francisco plan to send everyone uh we had an aircraft mishap two eight left is closed

1828:50 WOODSIDE okay you just want us to send everybody everybody around (unintelligible)

1828:56 CD all right p z
1829

1829:34 CD line clear

1829:40 SQL san carlos

1829:41 CD san francisco no transitions until further advised uh
aircraft mishap on runway two eight left

1829:46 SQL okay you gonna give me uh seven zulu delta back

1829:49 CD um

1829:50 SQL yeah i'll just take him back no worries

1829:51 CD yeah just take him back keep him clear of the bravo p z
1830
(1831-1834)
1835

End of Transcript

SECTION 11.

FAA Form(s) 8020-3, Facility Accident/Incident Notification Record



AAR 214

716113

KSFO

[illegible]


Form Updated by (Name, Title, Facility): SATCJ ROLF KNAACK SFO ATCT

Date: 7/6/13

* Accidents requiring telephone notification to Washington shall be made immediately following notification for emergency equipment and/or search and rescue.


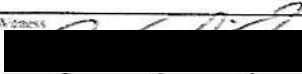
SFO-ATCT-0027
AAR214

SECTION 12.
FAA Form(s) 8020-26, Personnel Statement

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		1. Name of Reporting Facility: Northern California TRACON	2. Report Number: SFO-ATCT-0027
PERSONNEL STATEMENT		3. Aircraft Identification and Type: AAR214, B772	
4. Location of Accident Incident: San Francisco, CA		5. Date/Time of Accident Incident (UTC): July 06, 2013, 1828 UTC	
6. Name of Operating Individual: Bryan Friedline (BF)	7. Title: ATCS	8. Position and Time (UTC): 2B AP 1730-1823 UTC	
9. Complete in accordance with FAA Order 8020.16, Air Traffic Organization, Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/ incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through the Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.			
10. TYPE OF STATEMENT: <div style="text-align: right;"> <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL </div> <div style="text-align: center; margin-top: 10px;"> <input type="checkbox"/> COMMENT <input checked="" type="checkbox"/> NO COMMENT </div>			
11. Signature of Witness: 		12. Date of Signature: 7-30-13	



FAA Form 8020-26 (12-18)



SFO-ATCT-0027
AAR214

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility Northern California TRACON	2. Report Number SFO-ATCT-0027
		5. Aircraft Identification and Type AAR214, B772	
4. Location of Accident/Incident San Francisco, CA		6. Date/Time of Accident/Incident (UTC) July 06, 2013, 1828 UTC	
3. Name (Operating Position) Shane Evanshine (UC)	7. Title ATCS	8. Position and Time (UTC) 2W AP 1810-1856 UTC	
<p>9. Complete in accordance with FAA Order 8020.16, Air Traffic Organization, Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through the Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.</p>			
10. TEXT OF STATEMENT:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL <input type="checkbox"/> COMMENT <input checked="" type="checkbox"/> NO COMMENT	
11. Signature of Witness 		12. Date of Signature 7/25/13	

FAA Form 8020-26 (12-10)



SFO-ATCT-0027
AAR214


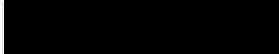
 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. NAME OF REPORTING FACILITY: SFO ATCT	2. REPORT NUMBER: SFO-ATCT-0027
		3. AIRCRAFT IDENTIFICATION AND TYPE: AAR214, B772	
4. LOCATION OF ACCIDENT/INCIDENT: San Francisco, CA	5. DATE/TIME OF ACCIDENT/INCIDENT (UTC): July 06, 2013, 1828 UTC	6. EQUIPMENT ATTACHMENT: <input type="checkbox"/> YES <input type="checkbox"/> NO	
7. NAME (OPERATING INITIALS): Joseph Y Okuda (JO)	8. TITLE: ATCS	9. POSITION AND TIME (UTC): Local LC 1716-1835 UTC	
10. COMPLETE IN ACCORDANCE WITH FAA ORDER 8020.16, AIR TRAFFIC ORGANIZATION, AIRCRAFT ACCIDENT AND INCIDENT NOTIFICATION, INVESTIGATION, AND REPORTING, PARAGRAPH 91, FAA FORM 8020-XX, PERSONNEL STATEMENTS. THE PURPOSE OF THIS STATEMENT IS TO PROVIDE ANY FACTS WITHIN YOUR PERSONAL KNOWLEDGE THAT WILL PROVIDE A COMPLETE UNDERSTANDING OF THE CIRCUMSTANCES SURROUNDING THIS ACCIDENT/ INCIDENT. SPECULATIONS, HEARSAY, OPINIONS, CONCLUSIONS, AND/OR OTHER EXTRANEEOUS DATA ARE NOT TO BE INCLUDED IN THIS STATEMENT. THIS STATEMENT MAY BE RELEASED TO THE PUBLIC THROUGH THE FREEDOM OF INFORMATION ACT OR LITIGATION ACTIVITIES INCLUDING PRETRIAL DISCOVERY, DEPOSITIONS, AND ACTUAL COURT TESTIMONY. THIS STATEMENT IS TO BE HAND PRINTED AND SIGNED BY YOU, AND YOUR SIGNATURE BELOW CERTIFIES THE ACCURACY OF THIS STATEMENT. IT WILL NEITHER BE EDITED NOR TYPED AND, ONCE SIGNED, WILL CONSTITUTE YOUR ORIGINAL STATEMENT.			
11. TEXT OF STATEMENT:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL	
<p>At the time of the accident I was working local control. I was instructing a developemental. To the best of my recollection this is the events of that day. It was a normal operation up to the point of the accident. AAR214 was cleared to land on RWY 28 L at approximately a 2 mile final. AAR214's approach appeared normal and I didn't observe any abnormalities. There was no indication of a low altitude alert. I scanned down RWY 28L to verify it was clear. I was also scanning multiple points in the airport environment to insure other aircraft were safe and complying with their instructions. This included aircraft on landing/departure rolls, aircraft on the upwind, aircraft holding short, aircraft that had exited the runways, aircraft awaiting to depart, as well as other responsibilities of working local control. I observed what appeared to be a large cloud of dust within the vicinity of RWY 28L and determined there was a crash. At that point training was suspended. I took over the local frequency from the developemental. I sent aircraft around and sanitized SFO's airspace. I responded to emergency response vehicles to aid AAR214. This included clearing them to cross active runways and closing the airport.</p>			
12. SIGNATURE OF WITNESS: 		13. DATE OF SIGNATURE: July 9, 2013	

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility: San Francisco ATCT	2. Report Number: SFO-ATCT-0027
		3. Aircraft Identification and Type: AAR214, B772	
4. Location of Accident/Incident: San Francisco, CA		5. Date/Time of Accident/Incident (UTC): July 06, 2013, 1828 UTC	
6. Name (Operating Initials): Russell Kipker (KP)	7. Title: ATCS	8. Position and Time (UTC): LC LC 1718-1831 UTC	
<p>9. Complete in accordance with FAA Order 8020.16, Air Traffic Organization, Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/ incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through the Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.</p>			
10. TEXT OF STATEMENT:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL <input type="checkbox"/> COMMENT <input checked="" type="checkbox"/> NO COMMENT	
11. Signature of Witness: 		12. Date of Signature: 8/1/13	



FAA Form 8020-26 (12-10)

SFO-ATCT-0027
AAR214

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility: SFO ATCT	2. Report Number: SFO-ATCT-0027
		3. Aircraft Identification and Type: AAR214 B772	
4. Location of Accident/Incident: San Francisco, CA		5. Date/Time of Accident/Incident (UTC): July 6, 2013 1828 UTC	
6. Name (Operating Initials): Alexis M. Shirkey (LX)	7. Title: ATCS	8. Position and Time (UTC): LCA 1729-1832 UTC	
9. Complete in accordance with RAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through The Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.			
10. Text of Statement:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL <input checked="" type="checkbox"/> COMMENT <input type="checkbox"/> NO COMMENT	
<p>At the time of the incident I was working local assist. To the best of my recollection these are the events pertinent to my position associated with the incident. I was monitoring the local controller's transmissions and engaged in coordinating instructions given to aircraft with other required controllers, or facilities. I was verifying clearances that were issued by the local controller, including a hold position and a line-up-and-wait clearance for United aircraft. I heard the runway 28L cleared to land instruction for Asiana 214. I heard the local controller issue a United aircraft to hold short of 28L. I was watching the United aircraft to ensure the hold short instruction. I looked up to ensure a departing SKYWEST aircraft was flying runway heading as instructed and heard the LC make an exclamation that drew my attention to 28L. I observed a large cloud of dust and an aircraft that had apparently crashed on runway 28L. I heard the LC issue go around instructions for SKW6389 and immediately coordinated the go around with the NCT departure controller advising them of the crash. I then coordinated with the NCT ^{AS} final controller advising them to send all aircraft around, due to an accident. I continued with the duties of local assist including response to the accident and ^{AS} clearing of the airspace.</p>			
11. Signature of Witness: 		12. Date of Signature: 7/12/13	

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility: SFO ATCT	2. Report Number: SFO-ATCT-0027
		3. Aircraft Identification and Type: AAR214, B772	
4. Location of Accident/Incident: San Francisco, CA		5. Date/Time of Accident/Incident (UTC): July 06, 2013, 1828 UTC	
6. Name (Operating Initials): Peter Sachs (PZ)	7. Title: ATCS	8. Position and Time (UTC): CD 1803-1911 UTC	
9. Complete in accordance with FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through The Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.			
10. Text of Statement:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL <input checked="" type="checkbox"/> COMMENT <input type="checkbox"/> NO COMMENT	
<p>At the time of the incident I was working FD/CD at SFO Tower. To the best of my recollection these are the events leading up to and immediately following the incident. In the few minutes prior to the incident, there were a few flight plans in the PDC system and I was actively engaged in transmitting them to the aircraft via the PDC. Associated with that, I was completing the required stripmarking for each issued clearance and reviewing each route to ensure it was appropriate. I then gave each completed strip to the ground controller. I heard an exclamation from another controller and looked up. I observed an aircraft sliding on the runway and a large cloud of dust and smoke from an apparent accident. I began the process of coordinating the incident with other entities. I called Woodside and notified them of an accident, to send everyone around because the airport is closed. I then called San Carlos to advise them that we would not be accepting any more transitions until further advised due to an aircraft mishap on 28L, and to take back the aircraft that they had just given us. I continued to provide additional services as needed.</p>			
11. Signature of Witness: 		12. Date of Signature: 7/12/2013	

**SFO-ATCT-0027
AAR214**

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility: SFO ATCT	2. Report Number: SFO-ATCT-0027
		3. Aircraft Identification and Type: AAR214 B772	
4. Location of Accident/Incident: SAN FRANCISCO, CA		5. Date/Time of Accident/Incident (UTC): July 6, 2013 1828 UTC	
6. Name (Operating Initials): DAWN McMullin (mm)	7. Title: ATCS	8. Position and Time (UTC): OS/CIC 1809-1829 UTC	
9. Complete in accordance with FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through The Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.			
10. Text of Statement:		<input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL <input checked="" type="checkbox"/> COMMENT <input type="checkbox"/> NO COMMENT	
<p>At the time of the incident I was working the CIC/TMC Position. I was monitoring LC/LCA Positions. To the best of my recollection these were my actions immediately before and after the incident. I heard a Skywest aircraft cleared to land with a wake turbulence advisory for a heavy 777 over the bridge. To the parallel I heard a departure clearance without delay for an additional Skywest aircraft and was watching to ensure his prompt departure. I heard ASIANA call in and heard a clearance to land runway 28L. I heard the local controller issue a hold short of 28L clearance to UNITED 385 and continued to scan the field and monitor. I heard an unusual statement that drew my attention to runway 28L. I observed an aircraft that had just crashed and was in the process of coming to rest. I immediately grabbed the crash phone and pushed the 3 button to initiate an alert 3 crash response. I looked out to ensure that the fire dept. doors had activated to know my alert had gone out. I heard the local controller issuing clearances and I called NCT TMC and advised them of the accident. I told them that we were shutting down the airport and that both runways needed to be stopped. I then began coordinating response to the accident and other duties of the CIC.</p>			
11. Signature of Witness: 		12. Date of Signature: 7/12/13	

SFO-ATCT-0027
AAR214



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

PERSONNEL STATEMENT

1. Name of Reporting Facility:

SFO ATCT

2. Report Number:

SFO-ATCT-0027

3. Aircraft Identification and Type:

AAR214, B772

4. Location of Accident/Incident:

San Francisco, CA

5. Date/Time of Accident/Incident (UTC):

July 6, 2013, 1828 UTC

6. Name (Operating Initials):

Nicole Findlay (NF)

7. Title:

ATCS

8. Position and Time (UTC):

GC2 1818-1911 UTC

9. Complete in accordance with FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through The Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.

10. Text of Statement:

☒ ORIGINAL

☐ SUPPLEMENTAL

☒ COMMENT

☐ NO COMMENT



At the time of the incident I was working ground control. To the best of my knowledge these are the events leading up to the incident. In the couple of minutes preceding the incident I had multiple aircraft calling for taxi instructions and multiple aircraft requesting push back clearances. I had a couple of specialized movement requests such as hold in place and at least one vehicle on the movement area that I was not talking to. Additionally I was engaged in the other activities of ground control such as scanning the movement area and active runways for aircraft exiting. I heard the local controller say something that drew my attention to runway 28L. I observed that an aircraft had crashed. I broadcasted everyone calling ground standby. I observed AFT aircraft moving and instructed them to hold their position. I made multiple transmissions for everyone on frequency to Standby and do not call. At that point, I began monitoring Radar coordinator so that I could assist my coworkers if needed. The local controller began clearing rescue vehicles to the scene.

11. Signature of Witness:

[Redacted Signature]

12. Date of Signature:

7/12/13

 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION PERSONNEL STATEMENT		1. Name of Reporting Facility: SFO ATCT	2. Report Number: SFO-ATCT-0027
		3. Aircraft Identification and Type: AAR214, B772	
4. Location of Accident/Incident: San Francisco, CA		5. Date/Time of Accident/Incident (UTC): July 6, 2013 1828 UTC	
6. Name (Operating Initials): Rolf Knaack (RK)	7. Title: SATCS	8. Position and Time (UTC): OS/CIC 1830-1917 UTC	
9. Complete in accordance with FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting. Paragraph 91, FAA Form 8020-26, Personnel Statements. The purpose of this statement is to provide any facts within your personal knowledge that will provide a complete understanding of the circumstances surrounding this accident/incident. Speculations, hearsay, opinions, conclusions, and/or other extraneous data are not to be included in this statement. This statement may be released to the public through The Freedom of Information Act or litigation activities including pretrial discovery, depositions, and actual court testimony. This statement is to be hand printed and signed by you, and your signature below certifies the accuracy of this statement. It will neither be edited nor typed and, once signed, will constitute your original statement.			
10. Text of Statement: <div style="text-align: right;"> <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> SUPPLEMENTAL </div> <div style="text-align: center;"> <input checked="" type="checkbox"/> COMMENT <input type="checkbox"/> NO COMMENT </div> <p> The facility guard alerted me to the AAR214 accident as I exited the men's restroom on the 5th floor. I looked out our office window and observed AAR214 lying in the grass south of R4284 near the touchdown zone, as I was waiting for the elevator. I ran up to the tower after exiting the elevator. I stated to all personnel that the airport is closed, do not land, depart, taxi or push any aircraft. I observed airport rescue vehicles proceeding directly to AAR214 with the help of the local controller. I observed passengers exiting the aircraft and scattering in all different directions. I then began making notifications and coordinating rescue flights. </p>			
11. Signature of Witness: 		12. Date of Signature: 7/12/13	

**SFO-ATCT-0027
AAR214**

SECTION 13.
Weather Products

KSFO

KSFO 061456M VRB03KT 10SM FEW010 SCT015 14/10 A2980 RMK AO2 SLP092

T01440100 51006 (SR)

KSFO 061556M 02003KT 10SM FEW012 SCT018 16/11 A2982 RMK AO2 SLP096

T01610106 (SR)

KSFO 061656M VRB06KT 10SM FEW013 SCT018 17/10 A2982 RMK AO2 SLP096

T01670100 (SR)

KSFO 061756M 21006KT 10SM FEW016 18/10 A2982 RMK AO2 SLP097 T01780100

10183 20128 51005 (SR)

KSFO 061856M 21007KT 170V240 10SM FEW016 18/10 A2982 RMK AO2 SLP098

T01830100 (SR)

KSFO 061956M 23004KT 10SM FEW016 19/10 A2981 RMK AO2 SLP095 T01890100

(SR)


KSFO 062056M 08005KT 10SM FEW016 21/11 A2980 RMK AO2 SLP090 T02060106

58007 (SR)

KSFO 062156M VRB06KT 10SM FEW016 22/11 A2978 RMK AO2 SLP085 T02170106

(RM)

I certify the above SFO METAR is an accurate copy of the original.



Andy Richards

Air Traffic Manager, SFO ATCT

SFO-ATCT-0027

AAR214

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

**QUALITY CONTROLLED LOCAL
CLIMATOLOGICAL DATA**
(may be updated)
HOURLY OBSERVATIONS TABLE
SAN FRANCISCO INTERNATIONAL AIRPORT
(23234)
SAN FRANCISCO, CA
(07/2013)

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: 8 ft. above sea level

Latitude: 37.619

Longitude: -122.364

Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti-meter (in. hg)
						(F)	(C)	(F)	(C)	(F)	(C)											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
06	0056	11	FEW012	10.00		56	13.3	52	11.2	49	9.4	78	8	230		29.76			29.78	AA		29.78
06	0156	11	FEW012	10.00		56	13.3	52	11.2	49	9.4	78	8	240		29.76			29.78	AA		29.78
06	0256	11	FEW012	10.00		56	13.3	52	11.2	49	9.4	78	0	000		29.76			29.78	AA		29.78
06	0356	11	FEW010 SCT013	10.00		56	13.3	52	11.2	49	9.4	78	7	190		29.77			29.78	AA		29.79
06	0456	11	FEW010 SCT013	10.00		55	12.8	52	11.0	49	9.4	80	0	000		29.78			29.79	AA		29.80
06	0556	11	FEW010 SCT013	10.00		56	13.3	53	11.5	50	10.0	80	7	190		29.78			29.80	AA		29.80
06	0656	11	FEW010 SCT015	10.00		58	14.4	54	12.0	50	10.0	75	3	VR		29.78			29.80	AA		29.80
06	0756	11	FEW012 SCT018	10.00		61	16.1	56	13.0	51	10.6	70	3	020		29.80			29.81	AA		29.82
06	0856	11	FEW013 SCT018	10.00		62	16.7	55	13.0	50	10.0	65	7	VR		29.80			29.81	AA		29.82
06	0956	11	FEW016	10.00		64	17.8	56	13.5	50	10.0	61	7	210		29.80			29.82	AA		29.82
06	1056	11	FEW016	10.00		65	18.3	57	13.7	50	10.0	59	8	210		29.80			29.82	AA		29.82
06	1156	11	FEW016	10.00		66	18.9	57	13.9	50	10.0	57	5	230		29.79			29.81	AA		29.81
06	1256	11	FEW016	10.00		69	20.6	59	14.9	51	10.6	53	6	080		29.78			29.80	AA		29.80
06	1356	11	FEW016	10.00		71	21.7	60	15.3	51	10.6	49	7	VR		29.76			29.78	AA		29.78
06	1456	11	FEW013	10.00		69	20.6	58	14.6	50	10.0	51	13	250		29.76			29.78	AA		29.78
06	1556	11	FEW012	10.00		68	20.0	58	14.4	50	10.0	53	17	230		29.75			29.77	AA		29.77
06	1656	11	FEW011	10.00		66	18.9	57	13.9	50	10.0	57	15	250		29.73			29.75	AA		29.75
06	1756	11	FEW011	10.00		65	18.3	57	13.7	50	10.0	59	9	250		29.73			29.75	AA		29.75
06	1820	11	FEW008	10.00		64	18.0	57	14.0	52	11.0	65	3	250		29.73		M	SP			29.75
06	1856	11	FEW007	10.00		63	17.2	56	13.2	50	10.0	63	6	160		29.74			29.76	AA		29.76
06	1956	11	FEW007	10.00		60	15.6	55	12.5	50	10.0	70	9	290		29.75			29.77	AA		29.77
06	2056	11	FEW007	10.00		59	15.0	54	12.3	50	10.0	72	7	300		29.77			29.79	AA		29.79
06	2156	11	FEW007	10.00		58	14.4	54	12.0	50	10.0	75	3	VR		29.78			29.80	AA		29.80
06	2256	11	CLR	10.00		57	13.9	53	11.8	50	10.0	78	0	000		29.78			29.80	AA		29.80
06	2354	11	BKN017	10.00		57	14.0	53	11.8	50	10.0	78	3	290		29.79		M	SP			29.81
06	2356	11	FEW015 BKN017 BKN020	10.00		57	13.9	53	11.8	50	10.0	78	3	300		29.79			29.81	AA		29.81

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